

**To:** Way, Steven[way.steven@epa.gov]  
**Cc:** Myers, Craig[Myers.Craig@epa.gov]  
**From:** Christoph Goss  
**Sent:** Sun 10/11/2015 1:22:23 AM  
**Subject:** RE: More Elevation Notes  
[ValveInvert.xlsx](#)

Hi Steve

Relative elevations will be fine. I suggest using BM-2 and the distance to the floor since that truly is a hard point. After I sent this email, Dave forwarded me a point list from TCI. It shows a new tie-in to the Goff East Control point. If we assume that is more accurate than the one from 9/30, we would have the attached elevations.

Christoph

**From:** Way, Steven [mailto:way.steven@epa.gov]  
**Sent:** Saturday, October 10, 2015 6:51 PM  
**To:** Christoph Goss <christoph.goss@deereault.com>  
**Cc:** Myers, Craig <Myers.Craig@epa.gov>  
**Subject:** Re: More Elevation Notes

Christoph- one thought at this point is to go with relative elevations and just grade from a point in the adit that we are confident is the sill or below. From there we can set everything else, yes/no ?

Otherwise my inclination is to get Goff out the but I'm not sure that they'll be available on Monday.

Thoughts ?

Thank you.

Steve

Sent from my iPhone

On Oct 10, 2015, at 5:42 PM, Christoph Goss <[christoph.goss@deereault.com](mailto:christoph.goss@deereault.com)> wrote:

Hi Everyone

After going through Dave's calculation and discussing his assumptions, it became clear to me that we have three different survey elevation benchmarks going on at the site. Our plan sheets are based on the Goff Engineering control points set on 8/28/2015. On 9/23/15 TCI (San Juan County surveyors) set two local benchmarks near the portal and inside the adit. These were based on a different basepoint than Goff. On 9/30/2015, TCI surveyed the Goff East control point and established a correlation between their elevations and Goff's. More recently, TCI provided Weston with different elevations for their benchmarks. The table below summarizes the three elevations. Note that the relative difference between the TCI points is not consistent. The difference between the TCI BM-2 elevation of 9/23 and 10/? Is 60.05 ft. The difference between the TCI "Bolt" elevation of 9/23 and 10/? Is 60.47 ft.

Description	Elevation	Elevation	Elevation (Goff)
	(TCI 10/?/15)	(TCI 9/23/15)	
Goff East Control Point	11378.07	11439.86	
BM-1	11383.70	11445.49	
BM-2	11449.12	11389.07	11450.86
Top of Timber (now removed)	11447.03	11386.98	11448.77
Bolt (listed on Elliot's notes)	11439.69	11379.22	11441.01
Floor of mine below BM2	11437.67	11377.20	11438.99

Before adjusting the valve and installing the manhole, I strongly suggest that we resolve this elevation issue and figure out how to correctly tie this into our basemap, existing piping,

adit discharge, and top of waste pile grading.

Christoph

**From:** Christoph Goss  
**Sent:** Saturday, October 10, 2015 11:07 AM  
**To:** Way, Steven <[way.steven@epa.gov](mailto:way.steven@epa.gov)>; Myers, Craig <[Myers.Craig@epa.gov](mailto:Myers.Craig@epa.gov)>; Matt Francis <[m.francis@erllc.com](mailto:m.francis@erllc.com)>; Petri, Elliott ([Elliott.Petri@WestonSolutions.com](mailto:Elliott.Petri@WestonSolutions.com)) <[Elliott.Petri@WestonSolutions.com](mailto:Elliott.Petri@WestonSolutions.com)>; Nicholas MacGregor <[nmacgregor@harwest.com](mailto:nmacgregor@harwest.com)>; Chris Hassel ([CHassel@harwest.com](mailto:CHassel@harwest.com)) <[CHassel@harwest.com](mailto:CHassel@harwest.com)>; Griswold, Hays ([Griswold.Hays@epa.gov](mailto:Griswold.Hays@epa.gov)) <[Griswold.Hays@epa.gov](mailto:Griswold.Hays@epa.gov)>; [dave.greortz@westonsolutions.com](mailto:dave.greortz@westonsolutions.com)  
**Cc:** Christoph Goss <[christoph.goss@deereault.com](mailto:christoph.goss@deereault.com)>  
**Subject:** Sill Elevation  
**Importance:** High

Hi Everyone

I wanted to share the design elevations that we have been using so that we can see if we really have a problem or not. All elevations are in the Goff Engineering coordinate system/benchmark shown in the Deere & Ault Plans. Elliot's notes and our survey control sheet are attached for quick reference.

Adit floor/sill at far brow (station 0+56): 11438.5

Adit portal/sump top: 11438.0

Distribution Manhole Surface Elevation of 11438.09

Distribution Manhole Inflow pipe invert 11435.09

Distribution Manhole Overflow pipe invert 11434.09

Distribution Manhole Outflow pipe invert 11432.59 (to 8" pipe)

See my email below regarding current portal elevation thoughts. We can make the adit-sump-manhole system work with a range of elevations.

I guessed at Dave's email. Please forward this message to him if I guessed wrong.

Feel free to give me a call or text on my cell. 720.560.1458

Christoph

**From:** Christoph Goss  
**Sent:** Saturday, October 10, 2015 10:18 AM  
**To:** Way, Steven <[way.steven@epa.gov](mailto:way.steven@epa.gov)>  
**Cc:** Myers, Craig <[Myers.Craig@epa.gov](mailto:Myers.Craig@epa.gov)>; Christoph Goss <[christoph.goss@deereault.com](mailto:christoph.goss@deereault.com)>  
**Subject:** Sill Elevation

Hi Steve and Craig

I just checked my notes. Based on the survey that Elliot shared with me, elevation of the top of the first timber by the far brow (stat 0+56) is 11448.8. If Weston assumed that an 8' post was sitting on hard ground, it would put the adit elevation at the far brow at 11440.8. If the mucking out puts it 1 ft lower, it would be at 11439.8. At a 1% slope for 50 ft, it would be at 11439.3 at the portal. Our assumed elevation at 0+56 was 11438.5. Our assumed elevation at the portal (station 0+00) was 11438. The design inflow elevation for the distribution manhole is 11435.09. We can adjust the sump to meet that.

My point is that we may not have a problem and if we do, it may be easy to resolve. We do

need the hard survey elevations. I hope that these numbers provide you with a handy reference. Note that San Juan's elevations are 61.79 feet lower than the Goff Engineering points used in our plans.

The steel set footers do have to rest on hard ground. We can adjust their height a bit if needed.

I will just be doing errands and chores today, so you can reach me pretty much anytime. I will not be available 1:30-2:30pm.

Christoph

**From:** Way, Steven [<mailto:way.steven@epa.gov>]  
**Sent:** Saturday, October 10, 2015 8:41 AM  
**To:** Christoph Goss <[christoph.goss@deereault.com](mailto:christoph.goss@deereault.com)>  
**Cc:** Myers, Craig <[Myers.Craig@epa.gov](mailto:Myers.Craig@epa.gov)>  
**Subject:** Re: Updated Sheet 11

Christoph - we need to talk about the floor elevation and your comment about leaving it. (If it was over excavated to remove soft ground and make room for 10 ft sets at the portal that may be that may be a problem. )

We do not want to make the sill deeper than necessary because that creates problems for the pipe and distribution sump depths. A 1/2 % slope in the adit is adequate is it not ?

Let me know if can call me this AM.

Thanks

Steve

Sent from my iPhone

On Oct 10, 2015, at 7:04 AM, Christoph Goss <[christoph.goss@deereault.com](mailto:christoph.goss@deereault.com)> wrote:

I suggest leaving the sill/floor as is and adjusting the sump as needed. Please get me a hard elevation tied back to the Goff Engineering control point. Call me later today if you want.

Christoph

On Oct 9, 2015, at 8:43 PM, Myers, Craig <[Myers.Craig@epa.gov](mailto:Myers.Craig@epa.gov)> wrote:

If any of you are available tomorrow, please advise. We've found some new info today on the sill elevation that may complicate the piping and steel set configuration/install. Chris, I believe Steve Way was going to try and talk with you this afternoon about this.

The sill is between 8" and 12" lower than expected, either due to an error in estimation/assumptions or due to mine drainage causing the rock to decompose. I need to know if it will be possible to raise the sill back to the elevation/grade we expected/planned for when laying the pipeline, or if we need to lower the pipe prior to setting the distribution box outside the portal. This work installing the distribution box is currently slated for Monday.

First cut thoughts on raising the sill: concrete/grout back to grade, or compacted backfill with a nominal coating of shotcrete to make it water resistant.

Craig Myers

Federal On-Scene Coordinator

U.S. EPA

Sent from my iPad

On Oct 9, 2015, at 3:00 PM, Christoph Goss <[christoph.goss@deereault.com](mailto:christoph.goss@deereault.com)> wrote:

Hi Everyone

Here is the updated plan sheet 11 with the new fish plate detail.

Christoph

**Christoph Goss, PhD, PE**

Civil Engineer, Principal

Deere & Ault Consultants Inc.

600 S. Airport Rd. Bldg A Suite 205

Longmont, CO 80503

USA

Tel: 303.651.1468

Fax: 303.651.1469

Mobile: 720.560.1458

[Christoph.goss@deereault.com](mailto:Christoph.goss@deereault.com)

[www.deereault.com](http://www.deereault.com)

<GK\_Adit Support Details.pdf>